



5204 E. Ben White Blvd.
Austin, TX 78741
Tel (512) 385-8542

10NO2000

J. MIKE AMERSON
WILLIAMS, MORGAN & AMERSON
7676 HILLMONT, SUITE 250
HOUSTON, TX 77040

RECEIVED

NOV 13 2000

WILLIAMS, MORGAN & AMERSON

RE: Invention Disclosure TT4354

Entitled:
MEASURING IMPLANT PROFILES WITH SCATTEROMETRY

Dear J. MIKE AMERSON:

2000.071000

Please prepare a US patent application for the subject invention disclosure and file the application in the USPTO within two months of this letter. A copy of the Invention Disclosure is enclosed.

Please follow the instructions set forth in AMD's DIRECTIONS TO OUTSIDE COUNSEL REGARDING PREPARATION AND PROSECUTION OF PATENT APPLICATIONS Version 1.0 dated May 1, 1996.

It is not necessary to prepare a PCT international application at this time. If one is later determined to be needed, AMD will so advise you.

If you have any questions or need additional information, please call me at 512-602-5964, or the responsible AMD Technology Law attorney, PAUL S. DRAKE at 512-602-2103.

Sincerely,

Samantha Cardona
Paralegal
Technology Law Department

Enclosure

cc:

STIRTON, JAMES BROCK

16

AMD INVENTION DISCLOSURE

TLD ID#

71 4354

Rec'd date

California x42110, return to MS68,

Texas x55964 return to MS562,

Dresden x83401 Silke Kretzschmar at MS E21-PP.

Project: ☐, Product: ☐, Process: ☐, Technology ☐, to which the invention applies (identify):

List 2 to 5 key words useful to search by to find patents or art related to this invention:

Working title of invention: Measuring implant profiles with scatterometry

Inventor's signature : _____ date : _____

Inventor's printed full name: James Brock Stinton Citizenship: _____

Employee #: _____ Extension: 50868 Mail stop: _____ Home telephone: () _____

AMD email address: _____ AMD office FAX: () _____

Division: _____ Directorate: _____ Dept #: _____ Dept : _____ Manager: _____

Residence address: _____

Post Office address: _____

Co-Inventor's signature : _____ date : _____

Co-Inventor's printed full name: _____ Citizenship: _____

Employee #: _____ Extension: _____ Mail stop: _____ Home telephone: () _____

AMD email address: _____ AMD office FAX: () _____

Division: _____ Directorate: _____ Dept #: _____ Dept : _____ Manager: _____

Residence address: _____

Post Office address: _____

Co-Inventor's signature : _____ date : _____

Co-Inventor's printed full name: _____ Citizenship: _____

Employee #: _____ Extension: _____ Mail stop: _____ Home telephone: () _____

AMD email address: _____ AMD office FAX: () _____

Division: _____ Directorate: _____ Dept #: _____ Dept : _____ Manager: _____

Residence address: _____

Post Office address: _____

List on additional sheet if there are more co-inventors and list total number of inventors here: _____

Name(s) of attorney(s) preferred by inventor(s) to prepare patent application, if known:

Identify known relevant art (patents, publications, products): _____

Witness 1 initial: _____ Witness 2 initial: _____

AMD INVENTION DISCLOSURE

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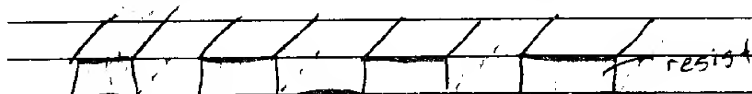
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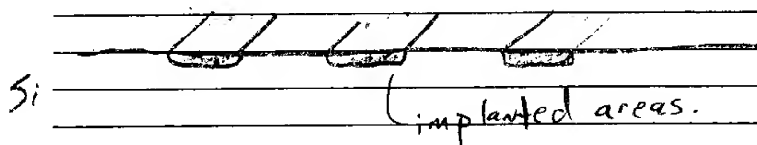
State the problem solved by this invention: The actual ~~mask~~ ~~area~~ that has been implanted can be measured after the implant mask (~~mask~~ photoresist) has been stripped.

Brief description and/or sketch of invention (please attach copies of AMD patent notebook pages, reports or drawings): By using scatterometry to measure an area which was covered by a patterned resist grating structure, then implanted, the ~~the~~ actual doped area can be mapped:



pre-implant

Si



post-implant + resist strip.

Si

The change in the optical properties of Si due to the doping allows the scatterometric technique to be used on this "embedded grating" of doped Si in a substrate of undoped Si.

Furthermore, by comparing the actual implanted area to the area masked and the profile of the resist prior to implant, the implant properties (dose, energy, angle) can be modulated to assure the correct ~~map~~ ~~doped~~ ~~profile~~ (junction depth, etc) is obtained. This can be repeated post-implantation of layers and post RTA to make sure the implant profile is correct.

Patent notebook # _____ Page numbers _____ Number of drawings _____

Witness 1 initial: _____ Witness 2 initial: _____

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Advantages (check all that apply):

<input type="checkbox"/> avoids existing patent(s)	<input type="checkbox"/> improves precision	<input type="checkbox"/> simplifies manufacturing
<input type="checkbox"/> new function	<input type="checkbox"/> improves accuracy	<input type="checkbox"/> improves wear characteristic
<input type="checkbox"/> improves density	<input type="checkbox"/> improves efficiency	<input type="checkbox"/> improves signal to noise ratio
<input type="checkbox"/> increases operating speed	<input type="checkbox"/> fewer component parts	<input type="checkbox"/>
<input type="checkbox"/> improves reliability	<input type="checkbox"/> reduces cost of manufacturing	<input type="checkbox"/>

Discussion of advantage of the invention over other solutions

(emphasize technical advance in the art as measured against known art): _____

First written description* of invention, date:	First external disclosure to (name):
Date of first drawing*:	Date of first external disclosure, none <input type="checkbox"/>
Date invention first reduced to practice:	External disclosure under NDA* No <input type="checkbox"/> Yes <input type="checkbox"/>
Made by (name):	First external disclosure or use by: presentation <input type="checkbox"/> ,
Tested by (name):	announcement <input type="checkbox"/> , sample <input type="checkbox"/> , sale <input type="checkbox"/> , other <input type="checkbox"/>
Date of first computer simulation:	Date of Non-Disclosure Agreement*, if any:
Date of first successful test:	Date of first publication*:
any of above occurred outside of USA <input type="checkbox"/>	Publication name:
* attach copy if possible	Date of first commercial use:

Does plan exist to publish, disclose or sell? If so, where and when? _____

Was invention conceived, constructed or tested pursuant to the performance under a development contract with another company: No ☐, Yes ☐. If yes, company name _____

If yes, name of AMD business contact and contract no. _____

Was invention jointly developed with participation of inventors from outside AMD: No ☐, Yes ☐.

If yes, Company name _____

I have read and understood this disclosure and read and signed each page of the attachments:

Witness 1 signature: _____	Date: _____
Printed name: _____	Employee #: _____
Witness 2 signature: _____	Date: _____
Printed name: _____	Employee #: _____

After completing to this point, deliver to department reviewer: date delivered: _____

Witness 1 initial: _____ Witness 2 initial: _____

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DISCLOSURE EVALUATION (*Entries from this point on are by the Reviewer*)Does this invention add value to the AMD intellectual property portfolio? Yes ☐, No ☐.Explain: _____

_____Do you know of any relevant art? Yes ☐, No ☐, If yes, attach a copy and explain: _____

_____What application(s) do you foresee for this invention? _____

_____I estimate the Value* of this invention disclosure is A ☐, B ☐, C ☐, D ☐.

* use worksheet "Valuing Invention Disclosures and Patents".

it is ☐, is not ☐ recommended to AMD for U.S. patent application filing,it is ☐, is not ☐ recommended to AMD for foreign patent application filing,it is ☐, is not ☐ recommended to be held as an AMD trade secret,Give this high priority ☐, normal ☐, low priority ☐, in patent application writing.**GUIDELINES AND CONSIDERATIONS FOR FOREIGN FILING DECISION**

Filing foreign patent applications is costly. We should choose to do it only when conditions warrant.

ALL CONDITIONS BELOW MUST APPLY IN ORDER TO INITIATE A FOREIGN FILING:

- **Invention is High-Valued (A, B)*, and**
- **Invention is in our technology path (usage), and**
- **Invention usage is detectable by inspection of product, and**
- **Invention is relatively hard to design around, and**
- **Competitor is operating in the country of interest.** (see ca000000.xls tabulation of "Factory Sites outside the USA .)

I recommend filing patent applications in foreign countries checked below:

Japan <input type="checkbox"/>	S.Korea <input type="checkbox"/>	Taiwan <input type="checkbox"/>	U.K. <input type="checkbox"/>	France <input type="checkbox"/>	Germany <input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Reviewer's signature: _____ Employee #: _____ Date: _____

Reviewer's printed name: _____

If foreign filing is checked, route to Div. VP for signature.

VP or Designate approves foreign filing (signature) _____

Reviewer: Complete this page and send disclosures to TLD for patent application filing.